REMARKS

The Office Action mailed November 6, 2006 has been reviewed and carefully considered. No new matter has been added.

Claims 1, 9, and 14 have been amended. Claims 1-14 are pending.

Initially, the Applicants gratefully acknowledge the Examiner's indication of allowable subject matter. In particular, Claims 2, 10, and 12 have been objected to and would be allowable if re-written to include the limitations of the base claim and any intervening claims.

Claim 14 has been objected to because of informalities. Accordingly, Claim 14 has been amended to now recite "motion estimated reference picture".

Moreover, while shown in the Figures as block 622 of Figure 6, the specification is amended to provide additional support for the limitations of Claim 14. In particular, the following paragraph is to be added/inserted at page 10, in between lines 2 and 3, immediately before the first full paragraph on page 10:

> In computing a motion vector for the mage block and the particular reference picture, function block 622 may involve, for example, testing within a search region for every displacement within a pre-determined range of offsets relative to the image block, calculating the sum of the absolute difference and/or the mean squared error of each pixel in the image block with a motion estimated reference picture, and selecting the offset with the lowest sum of the absolute difference and mean squared error as the motion vector.

"[I]nformation contained in any one of the specification, claims or drawings of the application as filed may be added to any other part of the application without introducing new matter" (MPEP §2163.06).

Accordingly, Claim 14 is believed to be correct, as well as properly supported by the specification, with no new matter being added. Withdrawal of the objection is respectfully requested.

Claims 1, 3-9, and 11 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,081,551 to Etoh (hereinafter "Etoh"). Moreover, Claim 13 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Etoh. Further, Claim 14 stands rejected

under 35 U.S.C. §103(a) as being unpatentable over Etoh in view of U.S. Patent No. 6,782,054 to Bellers (hereinafter "Bellers").

It is respectfully asserted that none of the cited references teach or suggest "a reference picture weighting factor assignor responsive to the relative positioning between the image block and first and second reference pictures indicated by the plurality of reference picture indices, the reference picture weighting factor assignor for calculating respective implicit weighting factors for the first and second reference pictures based on respective distances of the image block to the first and second reference pictures", as now recited in independent Claim 1.

Further, it is respectfully asserted that none of the cited references teach or suggest "calculating implicit weighting factors for the image block responsive to the relative positioning between the image block and first and second reference pictures indicated by first and second reference picture indices based on respective distances of the image block to the first and second reference pictures", as now recited in independent Claim 9.

As noted above, Claims 1 and 9 have been amended. Support for the preceding amendments may be found at least at page 5, lines 25-30, page 10, lines 5-7, page 10, lines 8-15, and Figure 6 of the Applicant's specification. In particular, the first preceding section (page 5, lines 25-30) of the Applicant's specification discloses:

> In embodiments of the present invention, an implicit weighting factor is applied to the reference picture prediction of a video compression encoder and decoder that uses multiple reference pictures. When a block is bipredictively coded and a new implicit mode is used as described herein, the distances of the current picture from the reference pictures are used to determine the relative weighting factors based on an interpolation/extrapolation formula.

Moreover, the second preceding section (page 10, lines 5-7) of the Applicant's specification discloses:

> When a block is bi-predictively coded and the new implicit mode is used, the distances of the current picture from the reference picture are used to determine the relative weighting factors, based on an interpolation/extrapolation formula.

Further, the third preceding section (page 10, lines 8-15) of the Applicant's specification discloses:

> For preferred embodiments of the present invention, a new definition of implicit bi-prediction is defined. An interpolation or extrapolation formula based on the distance between the coded picture and its reference pictures is used. The same formula is used for interpolation or extrapolation. The formula becomes an interpolation formula if the two reference pictures are one before and one after the current coded picture in display order, and it becomes an extrapolation formula if the reference pictures are either both before or both after the current coded picture in display order.

Moreover, Figure 6 of the Applicants' specification shows the motion vectors being output from the motion estimator 580 which, in turn, is connected in signal communication to the reference picture stores 570.

In contrast to the above recited limitations of Claims 1 and 9, Etoh discloses the use of "predetermined weight[s]" (Etoh, Abstract) as shown in FIG. 5 of Etoh, where "the weighting factors in the left side of FIG. 5 are for the luminance signal, and the weighting factors in the right side are for the color-difference signals" (Etoh, col. 8, lines 21-23). As further disclosed at column 8, lines 11-18 of Etoh:

> [B]ased on the detected motion vector, the weighted motion compensator 22a searches the reference image for each target macroblock for a region having the highest correlation, and extracts a region of 24x24 pixels which is wider than the macroblock and contains the located region and its adjacent areas; then, the pixels in the extracted region are multiplied by weighting factors, such as shown in FIG. 5, to obtain pixels for the extracted region.

Thus, in Etoh, the weighted motion compensator 22a extracts a 24x24 region based on the detected motion vector, but then applies (multiplies) **predetermined** weights to the pixels in the extracted region, as per the predetermined weighting factors shown in Figure 5 of Etoh.

However, Etoh does not disclose or suggest the use of **respective distances** from the image block to first and second reference pictures to **calculate** respective implicit weighting factors for the first and second reference pictures, as essentially recited in Claims 1 and 9. Thus, in Etoh, there is NO need to calculate implicit weighting factors, as per Claims 1 and 9, since predetermined weighting factors are used, let alone no need to use distance in such calculation.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." MPEP §2131, citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

Accordingly, Claims 1 and 9 are patentably distinct and non-obvious over Etoh for at least the reasons set forth above. Moreover, the remaining references do not cure the deficiencies of Etoh and are silent with respect to the above-recited limitations. That is, none of the cited references, either taken singly or in any combination, teach or suggest the above recited limitations of Claims 1 and 9.

Claims 3-8 depend from Claim 1 or a claim which itself is dependent from Claim 1 and, thus, include all the limitations of Claim 1. Claim 11 depends from Claim 9 and thus include all the limitations of Claim 9. Accordingly, Claims 3-8 and 11 are patentably distinct and non-obvious over the cited reference for at least the reasons set forth above with respect to Claims 1 and 9, respectively.

With respect to the remaining claims that have been rejected under 35 U.S.C. 103, "[i]f an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious" (MPEP §2143.03, citing *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)).

Claim 2 depends from Claim 1 and thus include all the limitations of Claim 1. Claims 13-14 depend from Claim 9 or a claim which itself is dependent from Claim 9 and, thus, include all the limitations of Claim 9. Accordingly, Claims 2 and 13-14 are patentably distinct and non-obvious over the cited references for at least the reasons set forth above with respect to Claims 1 and 9, respectively.

Thus, reconsideration of the rejections is respectfully requested.

In view of the foregoing, Applicants respectfully request that the rejection of the claims set forth in the Office Action of November 6, 2006 be withdrawn, that pending claims 1-14 be allowed, and that the case proceed to early issuance of Letters Patent in due course.

No fee is believed due with regard to the filing of this amendment. However, if a fee is due, please charge Deposit Account No. 07-0832.

Respectfully submitted,

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